

### Remarks

Claims 1 to 6 and 8 to 16 are currently pending. The rejections to claims 1 to 6 and 8 to 16 as outlined in the Office Action of September 24, 2002 are addressed below. Claims 1, 6, 9, 11, and 12 have been rejected under 35 U.S.C. §102(b) as being anticipated by Soichiro Kawakami (JP61037969). Claims 2-5, 8, 10, and 13 to 16 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Soichiro Kawakami (JP61037969). Applicant traverses these rejections, asserting that the Examiner has failed to establish valid *prima facie* cases for either anticipation or obviousness with regards to the rejected claims.

Soichiro teaches a cathode 1 comprising a supply pipe 5 that supplies gas via tube 63 to buffer 20 inside of partition wall 3, as shown in Figure 1 and described in the previously provided English translation of this reference, at for instance the last paragraph on page 7. Buffers 19 and 18, defined respectively by partitions 2 and 3, are supplied with gas only via outflow from the ports 15 and 14 in partition walls 3 and 2, respectively. No teaching or suggestion, either express or inherent, is provided in Soichiro to indicate that gas flow may occur into the buffers 18, 19, and 20 other than directly or indirectly via pipe 5 and tube 63, the orifice of which is positioned approximately centrally along the axis of the cathode assembly as shown in Figure 1.

The Examiner notes that he has maintained throughout the prosecution history “that the arrays of holes are formed in at least one innermost (item 3, Fig. 1,2 of Soichiro) tube and at least one outermost (items 2,1, Fig. 1,2) tube.” In contrast, Applicant has repeatedly contended that pipe 5 of Soichiro, having no orifices formed therein, is the “innermost” tube taught by Soichiro and is therefore neither suggestive nor anticipatory of the present invention in which an innermost tube with one or more arrays of orifices is claimed. “Innermost” is defined in Webster’s College Dictionary as “farthest inward.” Therefore, acceptance of the Examiner’s argument identifying partition 3 as an “innermost tube” requires adoption of a definition of “innermost” that is completely foreign to its generally accepted meaning. Furthermore, while Applicant maintains that the Examiner’s interpretation of Soichiro’s teachings relative to the instantly claimed invention is in error, Applicant notes that this distinction is in fact immaterial to the validity of the Examiner’s *prima facie* cases for either anticipation or obviousness on the basis of Soichiro. Applicant submits that both *prima facie* cases fail regardless of whether

Applicant's or the Examiner's interpretation of the relationships between the structural features of Soichiro and the presently claimed invention is correct.

Claim 1 of the present invention includes the express limitations that the innermost tube is "attached to a gas supply at one end and capped at the other" and that it and the outermost tube or tubes have "one or more arrays of orifices" formed therein and "extending along the substantial length." Pipe 5 in Soichiro is not capped at one end. Nor does it have one or more arrays of orifices formed along its substantial length. It does, however, have one end connected to a source for supplying a gas as described at the bottom of page 6 of the English translation. Partition 3 in Soichiro, which the Examiner alleges is equivalent to the "innermost tube" claimed in the present invention, has a capped end and is provided with a plurality of openings 15. However, partition 3 is clearly not connected to a gas source, either directly or indirectly, at one end. Rather, as noted at the beginning of the last paragraph on page 7 of the English translation of Soichiro, gas is supplied into the buffer 20 formed between partition 3 and partition 62 "via the supply pipe 5 and tube 63...through the openings at the two ends of the tube 63." Gas is ejected radially from tube 63 into the buffer 20 and directed such that it impinges on the side walls of partition 3 such that it cannot pass directly out of the openings 15. As Fig. 1 shows and the description in the Soichiro specification implies, the tube 63 is positioned such that it directs gas outwardly into the buffer 20 at the approximate axial center of the cathode 1.

Reliance on similarity in function of a claimed invention and the prior art as the basis for a *prima facie* case of anticipation and/or obviousness is clearly not supported by either the MPEP or any applicable case law. MPEP §706.02 explicitly states that "for anticipation under 35 U.S.C. §102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." MPEP §2114 further notes that "claims must be distinguished from the prior art in terms of structure rather than function." *In re Danly*, 263 F.2d 844, 847 (CCPA 1959). Furthermore, "apparatus claims cover what a device is, not what a device does." *Hewlett Packard Co. v. Bausch & Lomb, Inc.*, 909 F.2d 1464, 1469 (Fed. Cir. 1990). Just as it is not proper for a patent applicant to argue patentability of a claimed invention because it functions differently than a structurally identical prior art apparatus, nor is it permissible for the Examiner to argue that the present invention is either anticipated or obviousness over structurally different prior art because the two different structures purportedly perform the same function. Unless the prior art expressly or inherently

teaches all elements of the claimed structure, it cannot be anticipatory. Soichiro offers no teaching or suggestion that would motivate one of skill in the art to modify the cathode structures disclosed therein to supply gas to one end of an innermost tube with one or more arrays of orifices as recited in pending claim 1 of the instant application.

In summary, regardless of whether the Applicant's or the Examiner's interpretation of Soichiro is applied, Soichiro:

1. does not teach an innermost tube having one or more arrays of orifices attached to a gas supply at one end and capped at the other end;
2. expressly (in, for example, Fig. 1) teaches away from the structure claimed in claim 1 of the current application by disclosing that gas is supplied from a solid tube to the approximate axial center of the cathode structure, rather than via a gas supply attached at one end of an innermost tube with one or more arrays of orifices; and
3. inherently teaches away from the presently claimed invention in the last paragraph on page 7 because the teaching that gas uniformly spreads into the nested buffers is consistent with delivery of the gas in the approximate axial center of the cathode, not to one end of the innermost tube with one or more arrays of orifices.

Based on the foregoing, Applicant respectfully submits that the application is now in condition for allowance. If any matters can be resolved by telephone, the Examiner is invited to call the undersigned agent at the telephone number listed below. The Commissioner is hereby authorized to charge any other fees determined to be due to Deposit Account 50-2319 (Order No. A-67178/MSS/MDV (463035-409)).

Respectfully submitted,



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